

**Federal Agency Aquaculture Profile Series
U.S. Environmental Protection Agency (EPA)**

EPA Regulations Affecting Aquaculture Operations:

Clean Water Act (CWA)

NPDES Permits: The National Pollutant Discharge Elimination System (NPDES) program was created under the federal Clean Water Act to protect and improve water quality by regulating operations with point source discharges of pollutants into waters of the United States. These operations are required to obtain coverage under NPDES permits (40 CFR §122.2). An NPDES permit, issued by either EPA or an authorized state/territory, contains industry-specific technology-based and/or water-quality-based limits and establishes pollutant monitoring and reporting requirements to protect the quality of surface waters. An effluent guideline (technology based limit) has been developed for certain concentrated aquatic animal production (CAAP) facilities (40 CFR §451). The CAAP effluent guideline applies to the facilities that produce 100,000 pounds of fish annually. Facilities that are required to seek permit coverage, but are not covered by the ELG (i.e. operations that don't produce 100,000 pounds of fish annually), are be subject to technology-based limits based on Best Professional Judgement (BPJ) of the permitting authority.

NPDES and Aquaculture: <https://www.epa.gov/npdes/npdes-aquaculture-permitting>

CAAP Effluent Guideline: <https://www.epa.gov/eg/concentrated-aquatic-animal-production-effluent-guidelines>

Section 404 Program: The CWA Section 404, administered by the U.S. Army Corps of Engineers (Corps) and the EPA, establishes a permitting program to regulate the discharge of dredged and fill material into waters of the U.S. Proposed discharges are evaluated for compliance with environmental criteria, i.e., the Section 404(b)(1) Guidelines, developed by the EPA in conjunction with the Corps. Examples of activities related to aquaculture that may be subject to Section 404 permitting requirements include the discharge of dredged or fill material into open waters, wetlands or vegetated shallows to prepare the bottom substrate for larval shellfish attachment and growth, or to construct fishery impoundments.

404 Program: <https://www.epa.gov/cwa-404/section-404-permit-program>

Safe Drinking Water Act (SDWA)

Aquaculture Waste Disposal Wells: If an agricultural establishment or agribusiness disposes of (or formerly disposed of) fluids on-site in a well (40 CFR §144.3), such as a deep-cased well, dry well, seepage pit, large capacity septic system, or a drainage well, it may trigger EPA's Underground Injection Control Program. Under the minimum federal requirements, aquaculture waste disposal wells are "authorized by rule" (40 CFR §144). This means that aquaculture waste disposal wells do not require a permit if they do not endanger underground sources of drinking water and they comply with federal UIC program requirements. The prohibition on endangerment means the introduction of any contaminant must not result in a violation of drinking water standards or otherwise endanger human health. Owners or operators of Class V aquaculture waste disposal wells must submit inventory information to the UIC Program (40 CFR §144.26). Inventory information includes: (1) facility name and location, (2) name and address of legal contact, (3) ownership of facility, (4) nature and

type of injection wells, and (5) operating status of injection wells. States with primary enforcement authority may have more stringent requirements and in some cases an individual permit may be required.

While some aquaculture facilities use holding structures in natural, open water bodies and rely on natural water circulation for water replenishment, many facilities use closed systems (e.g., tanks or ponds) and accumulate wastewater and sludge that must be removed. At dozens of such facilities in Hawaii and several other states, this wastewater and sludge is disposed via underground injection. All injected aquaculture wastewater includes fecal and other excretory wastes and uneaten aquaculture food. The primary chemical and physical constituents of these wastewaters are nitrogen- and phosphorus-based nutrients and suspended and dissolved solids.

Aquaculture Waste Disposal Wells: <https://www.epa.gov/sites/production/files/2015-08/documents/aquaculture.pdf>

Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA)

Pesticide Registration: FIFRA requires all pesticides sold or distributed in the United States (including imported pesticides) to be registered by EPA. EPA can authorize limited use of unregistered pesticides or pesticides registered for other uses to address emergencies (Section 18 registrations) and special local needs (Section 24c registrations), provided sufficient cause is demonstrated. Chemicals and other materials to be used in aquaculture, such as products intended for use to control pests (including, but not limited to, any insect, other arthropod, nematode, any plant growing where not wanted, including any moss, alga, liverwort, or other plant of any higher order, and any plant part such as a root) may be subject to Pesticide Registration by EPA prior to marketing to the user. Older pesticides are re-evaluated by EPA on a 15-year schedule, under the Registration Review program, to ensure that as the ability to assess risk evolves and policies and practices change, all registered products continue to meet the statutory standard.

In evaluating a pesticide registration application, EPA assesses a wide variety of potential human health and environmental effects associated with use of the product. In assessing the potential effects of a pesticide, EPA examines the active ingredient of the pesticide as well as its formulated products; the particular site or crop on which it is to be used; the amount, frequency, and timing of its use; and, storage and disposal practices. A producer of the pesticide who intends to market that product (*i.e.*, the registrant) must provide data from tests done according to EPA guidelines. Depending on the proposed use of a pesticide, registrants are typically required to submit a range of studies on chemical/physical properties, environmental fate, and the toxicity of the pure chemical (active ingredient). These tests evaluate whether a pesticide has the potential to contaminate surface or ground water from leaching, runoff, and spray drift and cause short-term and/or long-term adverse effects on humans, wildlife, fish, and plants, including endangered species and non-target organisms. EPA evaluates the potential for human health risks which range from short-term toxicity to long-term effects, such as cancer and reproductive system disorders.

EPA also must approve the language that appears on each pesticide label. A pesticide product can only be used legally according to the directions on the labeling accompanying it at the time of sale. Some pesticide products, classified as "Restricted Use," can be applied by certified applicators only and are not for general use. The aquaculture or aquatic production facility is responsible for application of all pesticides in strict accordance with product labels. Misuse of a pesticide, including application to an unlisted site or an application rate exceedance, can result in enforcement action. Applicators and aquaculture production facilities must verify that pesticides applied in their operations have an exemption from or established tolerances for their specific aquacultural commodities.

Aquaculture facilities rely on a range of pest management tools to produce fish and shellfish products. These tools can include the use of pesticides to control nuisance species such as weeds, algae, and undesirable aquatic animals, and those pesticide products are subject to testing described in the 40 CFR Part 158. Some products (e.g., therapeutic compounds) used in aquaculture to control pests, such as internal worms or ichthyophthirius, are handled by using products regulated by the Food and Drug Administration (FDA).

Pesticides: <https://www.epa.gov/pesticides>

Toxic Substances Control Act (TSCA)

The Toxic Substances Control Act of 1976 provides EPA with authority to require reporting, record-keeping and testing requirements, and restrictions relating to chemical substances and/or mixtures. Certain substances are generally excluded from TSCA, including, among others, food, drugs, cosmetics and pesticides. TSCA may impact products used by, or manufactured or processed as part of, aquaculture production operations if such products are composed of or contain chemical substances that are regulated by TSCA. TSCA and its implementing regulations apply to both new chemical substances, i.e., those not on the TSCA section 8(b) Inventory of chemicals in commerce, and existing chemical substances on the TSCA Inventory.

TSCA Inventory: <http://www.epa.gov/opptintr/existingchemicals/pubs/tscainventory/index.html>

NOTE: This is a list of some of the key authorities administered by the U.S. EPA that affect aquaculture. It is not intended to be exhaustive. Other regulations not described here may also apply.